AGREEMENT BETWEEN THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION OF THE UNITED STATES OF AMERICA AND THE MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF LATVIA FOR COOPERATION IN THE GLOBAL LEARNING AND OBSERVATIONS TO BENEFIT THE ENVIRONMENT (GLOBE) PROGRAM, WITH APPENDICES.

January 27, 1999, Date-Signed
January 27, 1999, Date-In-Force

PREAMBLE

The United States of America National Oceanic and Atmospheric Administration, acting on behalf of itself and other United States of America Government agencies participating in the GLOBE Program (hereinafter, the United States side) and the Ministry of Education and Science of the Republic of Latvia (hereinafter, the Latvian side),

Intending to increase the awareness of students throughout the world about the global environment,

Seeking to contribute to increased scientific understanding of the Earth, and

Desiring to support improved student achievement in science and mathematics,

Have agreed to cooperate in the Global Learning and Observations to Benefit the Environment (GLOBE) Program as follows:

Article 1

THE GLOBE PROGRAM

The GLOBE Program is an international environmental science and education program that brings students, teachers, and scientists together to study the global environment. [*2] GLOBE has created an international network of students at primary, middle and secondary school levels studying environmental issues, making environmental measurements, and sharing useful environmental data with one another and the international science community.

Article 2

RESPECTIVE RESPONSIBILITIES

A. The United States side will:

1. Identify United States schools that will participate in the GLOBE Program (details regarding GLOBE schools in Appendix A);

2. Select, in consultation with international scientists and educators, the GLOBE environmental measurements and types of measurements equipment (described in Appendix B);

3. Select Principal Investigator Teams for the GLOBE environmental measurements, and support the United States members of the Team;

4. Develop, in consultation with international scientists and educators, GLOBE educational materials;

5. Translate GLOBE instructional materials related to measurements procedures and data reporting protocols into the six United Nations languages, and provide a copy of these plus all broader GLOBE educational materials to the Latvian side for further reproduction as necessary;

6. Conduct regional training sessions for GLOBE Country [*3] Coordinators and GLOBE teachers who will serve as trainers for additional GLOBE teachers in Latvia;

7. Design, develop, operate, and maintain GLOBE data processing capabilities and other computers (to the extent possible, textual material appearing on computer screens will be accessible in the student's choice among six United Nations languages);

8. Accept environmental data reported from GLOBE schools around the world, and develop and provide resultant global environmental images to the Latvian side; and

9. Evaluate the overall GLOBE Program periodically, in consultation with international GLOBE Country Coordinators, and modify the overall program as appropriate.

B. The Latvian side will:

1. Identify Latvian schools that will participate in the GLOBE Program (details regarding GLOBE schools in Appendix A) and provide an updated list of Latvian GLOBE schools to the United States side at the beginning of each school year;

2. Ensure that Latvian GLOBE students conduct the fundamental activities of GLOBE schools detailed in Appendix A (take GLOBE environmental measurements, report data, and receive and use resultant global environmental images, using GLOBE educational materials under [*4] the guidance of teachers trained to conduct the GLOBE program);

3. Name a Point of Contact from the Latvian Ministry of Education and Science responsible for policy-level communications with the Director of the GLOBE Program;

4. Name a Country Coordinator responsible for day-to-day management, oversight, and facilitation of the GLOBE Program in Latvia;

5. Ensure that the Country Coordinator and some GLOBE teachers attend GLOBE regional training and in turn provide GLOBE training to at least one teacher in each Latvian GLOBE school;

6. Ensure that GLOBE instructional materials related to measurement procedures and data reporting protocols are utilized in Latvian GLOBE schools, and that broader

GLOBE educational materials are appropriately translated, adapted, reproduced, and distributed to all Latvian GLOBE schools;

7. Ensure that the measurement equipment used by GLOBE schools to take GLOBE environmental measurements meets GLOBE specifications (described in Appendix B);

8. Ensure that teachers and students at Latvian GLOBE schools calibrate GLOBE measurement equipment according to procedures provided in GLOBE instructional materials;

9. Ensure that Latvian GLOBE schools have the necessary [*5] computer and communications systems to allow Internet/World Wide Web access in order to report GLOBE environmental images; if such computer and communications systems are not available in Latvian schools, make agreed alternative arrangements for such reporting and receipt (at a minimum, the Latvian Country Coordinator will need access to the Internet so that all measurement data from Latvian GLOBE schools will be reported via Internet); and

10. Evaluate GLOBE operations in Latvia periodically and assist the United States side in conducting periodic evaluation of the overall GLOBE Program.

Article 3

FINANCIAL ARRANGEMENTS

Each side will bear the costs of fulfilling its respective responsibilities under this agreement. Obligations of each side pursuant to this agreement are subject to its respective funding procedures and the availability of appropriated funds, personnel, and other resources. The conduct of activities under this agreement will be consistent with the relevant laws and regulations of the United States and Latvia.

Article 4

EXCHANGE OF DATA AND GOODS

GLOBE environmental measurement data, global environmental images, software, and educational materials will be available [*6] worldwide without restriction as to their use or redistribution.

Article 5

RELEASE OF INFORMATION ABOUT THE GLOBE PROGRAM

Each side may release information on the GLOBE Program as it may deem appropriate without prior consultation with the other.

Article 6

CUSTOMS AND IMMIGRATION

Each side will use its best efforts to facilitate the movement of persons and goods into and out of its territory and to accord entry to such goods into United States and Latvian territory free of customs duties and other similar charges, as is necessary to implement

this agreement, to the extent permitted by the laws and regulations of the United States and Latvia.

Article 7

DURATION

This agreement will enter into force upon signature of the two sides and will remain in force five years. It will be automatically extended for further five-year periods unless either side decides to terminate it and so notifies the other side with three months written notice. This agreement may be terminated at any time by either side upon three months prior written notice to the other side. This agreement may be amended by written agreement of the two sides.

Done at Riga, in duplicate, this twenty seventh day [*7] of January, 1999, in English and Latvian languages, each text being equally authentic.

SIGNATORIES:
For the National Oceanic and Atmospheric Administration of the United States of America

For the Ministry of Education and Science of the Republic of Latvia

APPENDICES:
APPENDIX A

GLOBE Schools

Each partner country is responsible for identifying its participating schools. Schools should be selected so as to satisfy the objectives of the GLOBE Program. In particular, countries should emphasize the selection of schools that will maximize the number and geographic distribution of students worldwide participating in the program. Also countries should consider involving schools in locations that will yield measurement data that is important to the international science community.

Students at all GLOBE schools throughout the world conduct the following fundamental activities: they make environmental measurements at or near their schools; report their data to a GLOBE data processing site; receive vivid graphical global environmental images created from their data and the data from other GLOBE schools around the world; and study the environment by relating their observations and the resulting images to broader environmental [*8] topics. All of these activities are conducted under the guidance of specially trained teachers (GLOBE-trained teachers).

GLOBE educational materials are used in GLOBE schools under the guidance of GLOBE-trained teachers. These materials contain instructional materials detailing procedures for taking environmental measurements and protocols for reporting data; they also explain the significance of the measurements, guide the use of the global

environmental images, and integrate the measurement aspects of the program into a broader study of the environment.

APPENDIX B

GLOBE Environmental Measurements and Equipment

GLOBE environmental measurements contribute in a significant way to the scientific understanding of the dynamics of the global environment. Every GLOBE school is encouraged to conduct the core set of GLOBE environmental measurements in the following critical areas: Atmosphere/Climate, Hydrology, Land Cover/Biology and Soils. As the GLOBE Program evolves, specialized measurements not common to all GLOBE schools may be added in order to address local environmental issues.

Students at all skill levels are active participants in the GLOBE Program. The actual participation [*9] is designed so as to be appropriate for primary, middle and secondary school levels. Younger students make limited measurements which may be qualitative rather than quantitative. Older students make additional measurements and more sophisticated measurements, as appropriate for their skill level. Measurement equipment is not standardized; rather, functional and performance specifications are provided for GLOBE instruments.

Following is the list of GLOBE core measurements and equipment. This list has been developed and will be periodically updated as provided in Article 2.A.2, based on experience gained in implementing the GLOBE Program.

MEASUREMENTS	EQUIPMENT NEEDED
Atmosphere/Climate:	
Air temperature	Max/Min Thermometer
	Calibration Thermometer
	Instrument Shelter
Precipitation	Rain Gauge
Cloud Cover/Type	Cloud Charts
Hydrology:	
Water pH	pH Paper, Pen, or Meter
Water Temperature	Organic Liquid-Filled
	Thermometer
Dissolved Oxygen	Dissolved Oxygen Kit
Alkalinity	Water Alkalinity Kit

MEASUREMENTS	EQUIPMENT NEEDED
Electrical Conductivity	Electrode-Type
	Conductivity Tester
Land Cover/Biology:	
Land Cover	Remote Sensing Image
	Multispec Software
Species Identification	Dichotomous Keys
Biometry	Measuring Tape
	Clinometer (Optional)
	Densiometer (Optional)
Soils:	
Soil Moisture	Soil Sample Cans
	Augur
	Soil Moisture Meter
	(Optional)
	Gypsum Blocks (Optional)
Soil Characterization	Color Chart
	Graduated Cylinders
	Augur (Optional)

[*10]

APPENDIX C

GLOBE Computer and Communications Systems

In order to derive maximum benefit from the GLOBE Program, all schools are encouraged to use the Internet, along with classroom computers. The Internet/World Wide Web multi-media information-access capability has been selected to support the required GLOBE school activities of data entry, data analysis, and use of global environmental images.

The diversity of technology accessible by schools worldwide may require, in some cases, that environmental measurements be reported via e-mail or in hardcopy and that a variety of media, including e-mail hardcopy, be used to distribute global environmental images. All schools that want to participate in the program will be accommodated.

Technology associated with the GLOBE Program will continually evolve to higher levels and participants will be encouraged to upgrade over time.